Allergy Abstracts

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Allergy Abstracts

Asthma and Hay Fever

Bronchial Asthma: Classification Based on Etiological and Pathologic Factors. Cohen, M. B.: Ann. Int. Med. **20**: 590, 1944.

Bronchial asthma is classified into two main groups; the extrinsic group, in which the offending allergen comes from without, and the intrinsic group, in which the symptoms result from internal stimuli. In addition, a combination of both extrinsic and intrinsic factors make up a subsidiary group. The author believes that bronchial asthma has a distinct pathology, regardless of whether it is of extrinsic or intrinsic etiology. The pathologic changes are not necessarily permanent, but are demonstrable during an attack and in those patients who die in an attack. The importance of recognizing intrinsic asthma clinically, without cutaneous testing, is stressed. An early diagnosis of intrinsic asthma would permit a more intensive study of these cases. This is important since the present methods of treatment are inadequate.

H.

Tropical Eosinophilia. Emerson, K., Jr.: U. S. Nav. M. Bull. **42**: 118, 1944.

A newly recognized disease, endemic in the coastal regions of northern India, has recently been described under the name of "tropical eosinophilia." It is characterized by a chronic paroxysmal cough, frequent attacks of asthmatic breathing, anorexia, weakness, loss of weight, and a marked leucocytosis with an eosinophilia of from 50 to 80 per cent. The paroxysms of coughing and moderately severe asthmatoid attacks resemble true asthma in their response to adrenergic drugs. Physical examination reveals sibilant and sonorous râles throughout the lungs and prolonged expiration. The x-ray appearance of the lungs is not unlike that in miliary tuberculosis. The etiology is unknown, but the disease is benign and responds specifically to treatment with arsenicals by mouth and intravenously.

A case is reported in which all the typical signs and symptoms appeared eight months after the patient had returned from India to the United States. A rapid recovery followed the oral administration of carbarsone. Since the current Indian campaign will doubtless expose members of the armed forces to the disease, its inclusion in the differential diagnosis of obscure asthmatic cases, particularly in men of the Far East fighting front, is important.

C.

Allergic Pulmonary Consolidations. Hansen-Pruss, O. C., and Goodman, E. G.: Ann. Allergy **2**: 85, 1944.

The authors prefer the term "allergic consolidation" to "Löffler's syndrome" for those cases of transient, afebrile pulmonary consolidation with eosinophilia which occur in allergic individuals. This condition must be differentiated from tuberculosis, sarcoid, virus pneumonia, ascariasis, and bacterial pneumonitis. It is characterized by migratory pulmonary consolidation, leucocytosis with eosinophilia, persistent and severe asthma, lack of response to sulfa drugs, an afebrile course, and a history of repeated upper respiratory infections. Recovery has occurred in all cases reported. Acquired bacterial sensitivity, as a result of repeated upper respiratory infections, may be the cause of this type of allergic illness. The eosinophilia, which is said to parallel the severity of vascular injury, is of myeloid origin, and is a generalized systemic phenomenon. The treatment of patients with this syndrome is directed toward alleviation of the severe persistent asthma. The response to measures usually successful in the treatment of asthma is poor. The course is protracted but not fatal. Morphine is contraindicated and sulfa drugs are valueless. Six case histories are presented.

F.

Spontaneous Pneumothorax, Massive Collapse and Subcutaneous Emphysema, Complicating Asthma. Field, C. E.: Arch. Dis. Childhood. **18**: 197, 1943.

A case is reported of a girl, aged 4 years, who showed the combined features of asthma, subcutaneous emphysema, collapse of the left lung, and spontaneous pneumothorax in the right chest and eventually recovered. This combination of complications is extremely rare. A possible explanation for the sequence of events is suggested. A mild inflammatory reaction of the right upper lobe of the lung was followed in two days by an asthmatic attack which caused rupture of alveoli in the inflammatory area. Air tracked along the interstitial tissue of the lung to the hilum, and there along the mediastinum to the neck, face, chest, abdomen, and thighs. X-rays at this time showed an associated collapse of the left lower lobe. Fifteen days later, a second attack of asthma resulted in accumulation of mucus in the bronchus of the left upper lobe, producing sudden collapse of that lobe. This accident, combined with the previous collapse of the left lower lobe, produced a rapid shift of the heart and mediastinum to the left, resulting in rupture of fresh adhesions in the right upper lobe. The recently sealed air leak was reopened, this time into the pleural cavity, producing a localized spontaneous pneumothorax.

C.

The Molar Standardization of Ragweed Pollen Extracts. Rockwell, G. E.: Ann. Allergy **2**: 137, 1944.

Solutions may be chemically standardized as normal solutions, as molar solutions, or on the basis of their oxidizing or reducing capacities. Molar standardization is feasible on complex mixtures, such as ragweed extract, if certain information concerning the composition of the extract is known. The following data concerning ragweed have previously been determined. The major antigen in ragweed pollen extract has a molecular weight of 4,496 and each molecule contains 38 nitrogen atoms, 2 of which are free α-amino nitrogen atoms. In addition, there are 4 minor antigens with molecular weights approximating 1,000. Each of these contains from 2 to 9 nitrogen atoms per molecule, of which one is a free α-amino nitrogen atom. From these figures and the knowledge of the total free α-amino nitrogen of the active antigen, as determined by the phosphotungstic acid method, a formula has been worked out to arrive at the amount of free α-amino nitrogen in Fraction 1 (major antigen) and in Group 2 (minor antigens). From these results, molar concentrations are easily computed. Complete arithmetical solutions are given. Standardization of the extracts must be done within a short time after their preparation since the free α-amino nitrogen changes upon standing.

F.

Sensitivity to Minor Pollens. Rogers, H. L.: Ann. Allergy **2**: 125, 1944.

In eastern Pennsylvania, the major pollen offenders are ragweed and grasses. Minor pollens such as trees, plantain, sorrel, and the chenopods are occasionally important, and frequently complicate hay fevers caused by major pollens. The author studied 102 patients who gave positive skin reactions to plantain, and divided them into six groups. These were: (1) Those in whom plantain was the sole cause of hay fever. Only two patients fell into this group. Specific treatment gave excellent results. (2) Those with symptoms only in June, who gave strong reactions to plantain and weak reactions to grasses and trees. Treatment with a mixture of these pollens gave good results in the five patients in this group. (3) A large series of patients in whom the grass reaction was equal to, or greater than, the plantain reaction. Treatment with both pollens gave better results than treatment with grasses alone. (4) A group in whom the plantain reaction was only one of many positive reactions. Symptoms were most severe during the first two weeks of May. The results of treatment were not so satisfactory in this group. (5) Typical ragweed-sensitive cases with skin reactions to plantain who, without plantain treatment, had few symptoms during the spring. (6) A small group with perennial allergic symptoms. Beneficial re-

sults were noted in a few of these patients after plantain treatment was instituted.

Specific treatment is more likely to result in a cure in plantain sensitivity than in either grass or ragweed hay fever. Diminution and even disappearance of the skin reaction to plantain frequently occurs after treatment. Of the 102 patients who reacted to plantain, 55 were also positive to sorrel. This pollen may frequently be a minor cause of hay fever and should be employed in treatment whenever the skin reaction is positive. Inhalants, such as dust and orrisroot, which may act as "synergists" should also be used in treatment when they give positive skin reactions. On the whole, hay fevers caused by minor pollens respond to treatment more satisfactorily than those caused by major pollens.

F.

Dermatology

A Specific Cutaneous Reaction in Persons Infected With the Virus of Herpes Simplex. Nagler, F. P. O.: J. Immunol. **48**: 213, 1944.

Herpes simplex has been shown to be due to a primary infection with the virus in early childhood. The virus remains latent in the cells of the buccal mucosa or in the circumoral skin and, when activated by various stimuli such as infections, exposure to excessive heat, light, or cold, typical lesions develop. The infection usually persists throughout life and recurs at various intervals. Individuals infected with herpes usually show a high concentration of circulating neutralizing antibody, which is demonstrable by the chorioallantoic inoculation method.

Herpetic individuals respond with a specific local reaction following an intracutaneous injection of heated virus. The reaction is read within twenty-four to forty-eight hours and consists of a variable degree of erythema and, sometimes, a central papule. A positive reaction always occurs in the presence of circulating antibody. A series of herpetic and nonherpetic adults and a group of children were skin tested and their bloods examined for circulating antibody. In adults with herpes, the intracutaneous test for herpes simplex was always positive and was associated with the presence of circulating antibody. The reaction was weaker in children than in adults. The primary herpes infection occurs between the ages of 2 and 4 years. A case is cited in which the primary infection was contracted in adult life. It is concluded that the cutaneous test for herpes simplex is an excellent diagnostic procedure.

A.

Dermatitis From Carrots. Peck, S. M., Spolyar, L. W., and Mason, H. S.: Arch. Dermat. & Syph. **49**: 266, 1944.

An outbreak of dermatitis occurring among workers employed in trimming carrots was investigated. In one plant, the carrots were immersed in a 7.5 per cent solution of sodium hydroxide prior to being

peeled mechanically, while in another plant no alkali was employed. The palms, the thenar and hypothenar eminences, the dorsa of the hands, the forearms, and, in some instances, the eyelids, face, and neck were affected. Seventeen cases were studied. Patch tests were performed with (1) slices of raw carrots, (2) raw potatoes, (3) the outside of a carrot after peeling (which might contain traces of alkali), (4) the outside of a potato after it had passed through alkali, (5) the outside of a potato after alkali had been washed away, (6) 2 per cent solution of sodium hydroxide, (7) mashed cooked carrots from ration C and (8) pieces of a washed rubber glove of one of the patients with dermatitis of the face. Five persons in the plant who never handled carrots were employed as controls. Strongly positive reactions were obtained in fifteen of the seventeen cases with raw carrot and the outside of the carrot. No positive reactions were obtained to potato. All the subjects including the controls showed positive reactions to 2 per cent sodium hydroxide solution, which is a primary skin irritant. These reactions disappeared much more rapidly than the carrot reactions. Cooked mashed carrots gave strong positive contact reactions, as did also a water extract of ground fresh carrots, the dried residue of the water extract and an acetone extract of fresh carrots. Positive reactions to raw carrots were observed in four of seventy-seven control subjects. The reactions were not vesicular but follicular and appeared to be the result of an irritant. Hence, carrot contains a skin-sensitizing principle which also may act on some persons as a primary irritant. Sensitization may occur after a week or more of exposure. Measures for the prevention of carrot dermatitis in workers are recommended.

A.

Dermatitis Due to Shoes. Shaw, C.: Arch. Dermat. & Syph. **49**: 191, 1944.

Twenty-two cases of dermatitis of the feet due to shoes were encountered over a period of three years. Contact dermatitis of the feet must be differentiated from fungus infections. The following important features are diagnostic of shoe dermatitis: (1) The appearance of the lesions following the wearing of new or recently dyed shoes, and the effects of discarding the suspected shoes, (2) a positive patch test with the suspected materials, (3) the intense itching which may occur before the lesions appear, (4) the absence of lesions in the interspaces of the toes, (5) the failure to demonstrate fungi and the failure to obtain relief with fungicidal therapy, (6) the sharp demarcation of the dermatitis, (7) involvement of the great toes and the dorsa of the toes and feet in dermatitis, whereas in dermatophytosis the little toes, the plantar surfaces and the sides of the feet are usually involved, and (8) involvement of the ankles when high shoes are worn.

Ten representative cases are reported in detail. The offending materials may be the leather, the material used in processing the leather,

the lining canvas (which is usually impregnated with antimildew substances such as chlorophenols, mercury compounds, copper compounds, salicylanilides, etc.) and the glues used on the insole. Dyes, shoe polishes, and socks may also produce dermatitis. In one of the cases a generalized dermatitis resulted. Dermatophytosis was not associated with the dermatitis in any of the cases observed. Treatment consists essentially of discarding the offending shoes.

A.

Acute Dermatitis of the Hands Due to Handling and Dressing Wild Rabbits. Tyler, E. R.: South. M. J. **37**: 240, 1944.

Fourteen cases of dermatitis of the hands occurred among individuals who handled or dressed wild rabbits. The dermatitis of the palms of the hands began within twenty-four to forty-eight hours after exposure and consisted of vesiculation, marked swelling, and itching. The condition remained localized to the hands and was apparently due to contact with the skin, flesh, or blood of the rabbit. Other contactants were eliminated as possible causes of the dermatitis. No patch tests were done.

A.

Dermatitis Venenata and Keratoconjunctivitis Caused by the Manzanillo Tree. Snow, J. S., and Harley, R. D.: Arch. Dermat. & Syph. **49**: 236, 1944.

The manzanillo tree is commonly found along the beaches throughout the Caribbean area and resembles the crab apple tree. Eighteen cases of severe manzanillo dermatitis were admitted to the Gorgas Hospital in the Canal Zone over a period of two years. Erythema, edema, and vesiculation develop on the exposed cutaneous areas within one hour after contact with the white, sticky sap of the tree. The areas most commonly involved are the face, hands, forearms, upper part of the trunk, and genitalia. Four of the eighteen cases had severe ocular involvement. The eyes were tightly closed and painful, and there was marked lacrimation. The lids showed pronounced erythema, edema, and vesiculation. An anesthetic solution had to be applied before the lids could be pried open. The corneal epithelium was denuded, and vision was impaired. In twelve cases, there was an eosinophilia of from 2 to 10 per cent. Patch tests with various parts of the tree (the green leaf, peeling from a green apple, and fresh white sap) were applied to the skin of fourteen normal subjects. The sap blistered all but one subject, and positive reactions were obtained with apple peelings in three cases. The leaves failed to produce reactions. The fresh sap was found to have a pH of 5 and, when dropped into the eyes of rabbits, produced marked ocular reactions within five minutes. The active excitant of the sap is ether-soluble and is removable from the exposed skin by ether,

soap and water, sea water, or lime juice, named in the order of their effectiveness. Prophylactic measures are effective for about thirty-minutes after exposure. Treatment of the dermatitis is symptomatic. The sap of the manzanillo tree is a primary cutaneous irritant.

A.

Contact Eczema Due to Nail Polish. Dobes, W. L., and Nippert, P. H.: Arch. Dermat. & Syph. **49**: 183, 1944.

Ninety cases of contact eczema due to nail polish were analyzed. The commonest lesion is a patchy dermatitis of the upper eyelids, although any part of the skin surface may be involved. Patch tests were performed with seven brands of nail polish, including colorless and colored lacquers of each brand. Twenty-nine different lacquers were tested on each individual in addition to the lacquer that the patient had been using. Of thirty patients tested, only two showed positive reactions to all brands of nail polish. These patients were apparently lacquer-sensitive. Patients were tested with the common ingredients of nail polish, including the body, plasticizer (resin), solvent, dye, and perfume. Positive reactions were elicited with resin, dye, and nitrocellulose. None of the patients showed positive reactions to the camphor plasticizer, ethyl acetate, butyl acetate, or butyl alcohol. It was concluded that the solvents in nail polishes are usually the cause of the dermatitis and that patch tests are not as important as clinical observation in making a diagnosis. The majority of patients in the present series of cases were able to tolerate some brand of colorless nail polish.

A.

Otorhinology and Ophthalmology

Ariboflavinosis as a Probable Cause of Vernal Conjunctivitis. Castellanos, L.: Arch. Ophth. **31**: 214, 1944.

Clinically, the eye lesions in ariboflavinosis resemble those seen in vernal conjunctivitis. One hundred and five patients with vernal catarrh were given 1 to 3 tablets (1 mg.) of riboflavin daily during the hot weather. In addition, they received symptomatic treatment in the form of eye drops. Milk, in large quantities, was recommended because of its high riboflavin content. Thirty-five per cent of the patients reported marked improvement in symptoms within three to four days and 65 per cent noted amelioration of eye symptoms within ten to fifteen days. It is suggested that there may be a riboflavin deficiency in these patients as a result of a more rapid destruction of the vitamin by the ultraviolet rays of sunlight and that a greater demand for this vitamin may exist during warm weather. The author admits that further study is necessary before this theory can be confirmed.

C.

Endophthalmitis Phacoanaphylactica. Scobee, R. G., and Slaughter, H. C.: Am. J. Ophth. **27**: 49, 1944.

It has been demonstrated that rabbits receiving intracutaneous injections of staphylococcus toxin developed not only antitoxin but also a hypersensitiveness to the beef broth in which the toxin was produced. In a series of experiments on eleven rabbits, the authors confirmed the work of Burky, in which he showed that cutaneous sensitivity to lens substance could be induced in rabbits by repeated and coincident injections of staphylococcus toxin and lens substance. When the eyes of such sensitive rabbits were needled, a clinical and histologic picture developed that resembled endophthalmitis phacoanaphylactica in man.

C.

Juvenile Cataract in Association With Dermatoses. Rolett, D. M.: Am. J. Ophth. **27**: 389, 1944.

Juvenile cataract is occasionally found to be associated with dermatoses such as scleroderma or neurodermatitis, and with endocrine disturbances. A case of juvenile cataract in a 20-year-old male is presented. The patient also showed a generalized neurodermatitis and sexual infantilism. There were 16 per cent eosinophiles in the blood smear. The skin changes had preceded the cataracts by several years. The literature on the subject is reviewed. The skin pathology varies and may occur simultaneously with or prior to the occurrence of the cataracts. The skin changes do not appear to be the cause of the cataract.

C.

Sinusitis in Childhood. Barbosa, J. F.: Rev. brasil de oto-rino-laring. **11**: 57, 1943.

Sinusitis in infants and young children occurs more frequently than is generally believed. The Proetz displacement method of filling the sinuses with radiographic contrast media and studying the subsequent emptying time is an important diagnostic aid. Sinuses which empty within seventy-two hours are considered normal. An emptying time up to one hundred and forty-four hours indicates that the lesion of the sinus mucosa is still reversible, and that conservative treatment is warranted. Conservative therapy is considered futile if the emptying time exceeds one hundred and forty-four hours. The instillation of 1 per cent ephedrine in physiologic saline during the application of negative pressure while the patient is in the Parkinson or Proetz position is considered the best form of conservative treatment.

C.

Miscellaneous Allergies

Immunologic Studies With Insulin Resistance. I. Report of a Case Exhibiting Variations in Resistance and Allergy to Insulin. Lowell, F. C.: J. Clin. Investigation **23**: 225, 1944.

A case of insulin allergy associated with insulin resistance is reported. During several periods of hospitalization, desensitization with insulin was followed by a brief period of satisfactory physiologic response. Continued administration of insulin, however, resulted in a state of insulin resistance. An insulin-free period was followed by return of the allergy and of physiologic irresponsiveness. The changes which occurred, and the degree of insulin resistance were apparently related to the administration and withdrawal of insulin. The resistance seemed to be specific in that human insulin caused a greater fall in blood sugar levels than did crystalline insulin. The findings seem to point to the presence of two types of antibodies to insulin, an allergic antibody, or reagin, and an insulin-neutralizing antibody.

F.

Immunologic Studies in Insulin Resistance. II. The Presence of a Neutralizing Factor in the Blood Exhibiting Some Characteristics of an Antibody. Lowell, F. C.: J. Clin. Investigation **23**: 233, 1944.

An attempt was made to demonstrate the presence of an insulin-neutralizing factor in the bloods of two insulin-resistant patients. Sera from these patients were mixed with insulin and injected intraperitoneally into mice. Each animal received a mixture of .003 units of insulin, 0.40 ml. of serum and 0.1 ml. of saline. Mice injected with mixtures containing sera which had been drawn when patients were demonstrably resistant to insulin showed no symptoms of hyperinsulinism. The same results were obtained with sera taken within eight weeks after insulin-resistance had been demonstrated and the administration of insulin had been stopped. Forty-six per cent of mice injected with mixtures of insulin and serum obtained while the patient was responsive to insulin showed symptoms of hyperinsulinism. The same effect occurred with serum taken within a period of three months before responsiveness to insulin was demonstrated. The appearance and disappearance of insulin-neutralizing activity in the sera seemed to depend on the administration or withdrawal of insulin. The Prausnitz-Küstner phenomenon was demonstrated with the serum of one of the patients. A diminution in the skin-sensitizing capacity of the serum was noted after the patient had been desensitized. The presence of precipitin was demonstrated in three of the eight tests carried out, but no correlation was noted between the presence of precipitin and the neutralizing or skin-sensitizing capacity of the serum.

F.

Insulin Resistance. The Role of Immunity in Its Production. Lerman, J.: Am. J. M. Sc. **207**: 354, 1944.

The sera of six insulin-resistant patients were studied by ring-precipitin and Prausnitz-Küstner tests. Two of the sera gave positive precipitin and passive transfer reactions. Two other sera gave only positive transfer reactions. The findings obtained in these cases suggest that the degree of insulin resistance parallels the concentration of antibodies. The sera of insulin-resistant patients react almost alike with insulins from various animal sources and these patients respond as poorly to treatment with one type of insulin as with another. Hence, insulin antibodies appear to be more hormone-specific than species-specific. This specificity is relative, inasmuch as the reaction of the antiserum may be greater with the hormone from one species than with that from another. The clinical studies disclose that patients recovering from insulin resistance usually become severe diabetics, requiring from 50 to 60 units of insulin per day.

F.

Insulins and Insulin Modifiers. Intradermal Studies. Page, R. L., and Bauman, L.: J. A. M. A. **124**: 704, 1944.

The cutaneous reactions obtained by the intracutaneous technique with protamine, globin, and several other types of insulin were compared in allergic and nonallergic individuals. Among the preparations tested, zinc chloride, beef insuliin, and protamine were the most irritating. In the allergic group, protamine reactions were 24 times as frequent as globin reactions. In the nonallergic, insulin-treated, diabetic group, protamine reactions were 7.5 times as frequent as globin reactions, and beef insulin reactions were 5 times as frequent as purified insulin reactions.

F.

"Drug Fever" Accompanying Second Courses of Sulfathiazole, Sulfadiazine, and Sulfapyridine. Dowling, H. F., and Lepper, M. H.: Am. J. M. Sc. **207**: 349, 1944.

In a study of 737 patients who received various sulfonamides, it was found that 5 per cent developed febrile reactions during the first course of treatment. Among those who received two courses of the same drug, 16 per cent developed febrile reactions which, in many cases, were accompanied by dermatitis and conjunctivitis. When the sulfonamide taken in the second course was different from that used in the first, only 3 per cent developed drug fever. Sulfathiazole caused reactions more frequently than did sulfadiazine or sulfapyridine. In view of these findings, it seems advisable, in a second course of treatment, to employ a different sulfonamide from that administered in the first course.

F.

Reactions to Sulfonamide Compounds. A Review of 186 Cases. Frist, I. F.: War Med. **5**: 150, 1944.

An analysis of 186 reactions to sulfonamide compounds is presented. Fever occurred in 71 cases. It was sudden in onset, intermittent in character, and reached high levels. It usually occurred from the fourth to fifteenth day after the onset of treatment. It disappeared rapidly after the drug was discontinued. Bradycardia was a constant feature of the drug fever. Cutaneous manifestations consisted of erythema nodosum, urticaria, maculopapular eruptions, and, in one case, exfoliative dermatitis. Polyarthritis was noted in six cases and peripheral neuritis in one. An interesting case history, in which interstitial myocarditis was the predominant reaction to sulfonamide, is presented. The indiscriminate use of sulfonamide compounds is strongly condemned.

H.

Thrombocytopenic Purpura—A Case Caused by Sulfadiazine. Meyer, A. H.: California & West. Med. **60**: 99, 1944.

A case of thrombocytopenic purpura, caused by sulfadiazine, is reported. This is the third case recorded in the literature. The patient, a 7-year-old boy, was being treated for impetiginous lesions which developed after chickenpox. Sulfathiazole ointment was applied locally and sulfadiazine was given orally. A rash developed on the second day after 4.5 Gm. had been administered. Marked hematuria developed on the fourth day after a total of 9 Gm. of sulfadiazine had been given, and the child was hospitalized. A positive history of asthma was obtained in the child and in his mother. The blood studies confirmed the diagnosis of thrombocytopenic purpura. The platelet count was 20,000 but, two weeks after admission, it rose to 139,000 and the patient recovered. The danger of promiscuous sulfonamide therapy is stressed.

A.

Anaphylaxis

A Quantitative Study of Passive Anaphylaxis in the Guinea Pig. II. Kabat, E. A., and Boldt, M. H.: J. Immunol. **48**: 181, 1944.

A quantitative study of passive anaphylaxis was made on guinea pigs passively sensitized with homologous sera containing antiovalbumin antibodies. The sensitizing sera were obtained by injecting large guinea pigs intramuscularly with an emulsion consisting of 50 mg. of dried tubercle bacilli in 20 ml. of paraffin oil, and 500 mg. of ovalbumin in 10 ml. of water and 10 ml. of aquaphor. Each animal received two injections of the emulsion five days apart. On the fifth, eleventh, and eighteenth day after the last intramuscular injection the animals were

injected intracutaneously with ovalbumin. Precipitins were present in all animals one week after the third intracutaneous injection. The antibody nitrogen content of the sera was determined by the quantitative precipitin method after removal of the complement-nitrogen by adsorption with the unrelated precipitating system, Type III pneumococcal polysaccharide and homologous antibody. Various dilutions of guinea pig antisera were then injected intravenously into normal guinea pigs and forty-eight hours later 1 mg. of ovalbumin was injected intravenously. Various degrees of anaphylaxis were obtained with amounts as little as .005 mg. antibody N, but uniformly fatal anaphylaxis occurred with sensitizing injections of .03 mg. of antibody N or more. In another series of experiments the shocking dose was varied with a constant sensitizing dose. The results indicated that, when more than enough antibody N is used for passive sensitization, uniformly fatal anaphylaxis results, even when the dose of antigen is decreased ten-fold to .01 mg. ovalbumin. The authors concluded from these studies and from those made previously with rabbit antisera that guinea pig anti-ovalbumin and rabbit antialbumin, or antipneumococcal antibody, are equally effective on a weight basis in producing passive sensitization in guinea pigs. In both species, anaphylactic shock occurred most regularly in the region of antigen-excess as compared with the amount of antigen required for in vitro precipitation of equivalent quantities of antibody nitrogen.

A.

Role of Acetylcholine in the Anaphylactic Process. Farber, S., Pope, A., and Landsteiner, E., Jr.: Arch. Path. **37**: 275, 1944.

Using a technique different from that previously employed, the writers attempted to ascertain whether acetylcholine is released during anaphylactic shock in the guinea pig. The heart, lungs, and small bowel were removed from guinea pigs sensitized to horse serum. One part of each organ was placed in Tyrode's solution and one part in Ringer's solution with physostigmine. A section of the organ was shocked, in vitro, according to the technique of Schild, by the addition of from 0.05 to 0.2 ml. of horse serum. The acetylcholine content of the shock fluid was assayed on the leech and in cats. The histamine content of the fluid was assayed on normal guinea pig ileum. No evidence was obtained to indicate that more acetylcholine is released from sensitized guinea pig lungs and intestines, shocked, in vitro, than from normal lungs or intestines. The liberation of acetylcholine was noted in 10 per cent of in-vitro shocked hearts. It was completely absent in similarly treated normal hearts. The liberation of histamine from the tissues of the guinea pig during shock was demonstrated.

H.

Vascular Pathology in Rabbits Following Administration of Foreign Protein. Fox, R. A., and Jones, L. R.: Proc. Soc. Exper. Biol. & Med. **55**: 294, 1944.

Rabbits were injected with two or three large doses of horse serum administered either intravenously or intraperitoneally. Subsequently, these animals also received one or more small doses intravenously. The rabbits which did not die of anaphylaxis were sacrificed at various intervals. All the animals were eventually autopsied and twenty of the thirty-one studied showed significant pathologic changes, mostly in the heart and, to a lesser extent, in the liver, lung, testis, kidney, and mesentery. The cardiac pathology consisted of vascular and perivascular changes of the smaller branches of the coronary arteries. An eosinophilic infiltration of the myocardium was occasionally observed. The vascular changes consisted of intimal hyperplasia and proliferation of adventitial cells, interspersed with lymphocytes, mononuclear cells, and occasional polymorphonuclear neutrophiles. Necrosis was not seen, but there was fibrinoid degeneration of the intima and media. In some instances, the lesions resembled so-called "rheumatic arteritis." They did not seem to resemble the lesions of periarteritis nodosa seen in man and those produced experimentally in rabbits by Rich and Gregory. Twenty-three of the rabbits were skin-tested with horse serum, in the course of the experiments, and all showed positive reactions consisting of edema, erythema, and induration at the site of injection. Some of the test areas became necrotic, and all the animals in which this occurred showed vascular changes in the heart. However, eight of ten rabbits which failed to develop necrotic reactions also showed vascular lesions. Twelve of the thirty-one rabbits developed a serum sickness reaction of the ears after a single large dose of horse serum and all of these animals exhibited vascular pathology. Anaphylactic symptoms bore no relationship to the development of vascular lesions. It was concluded that vascular and perivascular reactions occur in the small branches of the coronary arteries of rabbits injected with horse serum, especially in those rabbits which show the necrotic type of skin reaction.

A.

Miscellaneous

Eosinophilia in Cerebrospinal Fluid. Applebaum, I. I., and Wexberg, L. E.: J. A. M. A. **124**: 831, 1944.

The rare finding of eosinophilic granulocytes in the spinal fluid is discussed. A case of spinal fluid eosinophilia, with manifestations of acute cerebrospinal meningitis, is reported. The syndrome closely resembled that of cysticercosis of the central nervous system, and this was considered the most probable diagnosis. Neurosyphilis and echino-

coccic cystic disease of the central nervous system are other diseases which must be ruled out when eosinophiles are found in the cerebrospinal fluid.

H.

Experimental Studies in Cardiovascular Pathology. VIII. Late Vascular Reactions of Histamine Shock in Dogs. Hueper, W. C., and Ichniowski, C. T.: Am. J. Path. **20**: 211, 1944.

Dogs which survived histamine shock were sacrificed eight days later, and their organs were examined histologically. The shock had been induced by the subcutaneous injection of histamine dihydrochloride suspended in a mixture of cottonseed oil and an absorption ointment base. Within ten to twenty minutes after the injection, the blood pressure dropped from 100 mm. to 30 or 40 mm. of mercury and remained at this level for several hours until anti-shock treatment was instituted within an hour or two. Histologic examinations revealed that the late vascular reactions of histamine shock consisted of degenerative, cystic, and calcifying lesions in the aorta, especially in the media and in the smaller arteries such as the carotid, cerebral, coronary, and gastric arteries. Myocardial degeneration with calcification was also noted. Prepyloric peptic ulcers, pericentral hepatic necroses with hemorrhage and fibrosis, and focal splenic fibroblastic proliferations resulted from the transitory circulatory and vascular reactions of histamine shock. The organic vascular lesions observed in these animals were offered as a possible explanation of delayed deaths after shock.

A.

Filariasis Bancrofti: Its Diagnosis by Immunologic Tests With Antigen Derived From Litomosoides Carinii. Culbertson, J. T., Rose, H. M., and Demarest, C.R.: Am. J. Hyg. **39**: 156, 1944.

Immunologic tests have great potential usefulness as diagnostic aids in infections of the type caused by Wuchereria bancrofti because antibody appears in the blood of such patients long before the parasite reaches maturity, and before the organism can be recovered from the blood. Eighty-one soldiers, in whom a presumptive diagnosis of filariasis had been made, were tested with antigen derived from Litomosoides, a filarial worm found naturally in the pleural cavity of the cotton rat. About 0.1 ml. of the carbolized antigen in a 1:200 dilution was used for the intracutaneous test. Carbolized saline was used as a control. Antigen in a 1:125 dilution was used for precipitin and complement fixation tests. Positive cutaneous reactions were observed in sixty-six (81.4 per cent) of the eighty-one men tested. The control tests were uniformly negative. With the complement fixation tests, fifty-nine (76.6 per cent) of seventy-seven sera were positive. Positive precipitin reactions were obtained in fifty-eight (75.3 per cent) of seventy-seven sera tested. Only

thirty of seventy-six cases showed more than 4 per cent of blood eosinophiles. No microfilariae were seen in any of the thick blood films. The cutaneous, complement fixation, and precipitin tests were only roughly correlated. Four cases gave negative reactions to all three tests. The authors believe that some of the negative cutaneous tests might have become positive if observations had been continued for longer than five minutes. Only two positive cutaneous reactions were found in forty soldiers who were not suspected of having filariasis. One of them showed a positive reaction to trichina. Extracts of the filarial worm used in these studies also elicited cutaneous responses in patients with filarial infections other than bancrofti; namely, onchocerciasis and loaiasis. It is probable that other nematode infections, such as trichiniasis, hookworm, and ascariasis will produce positive cutaneous reactions to tests with the antigen described in this study.

H.

Influence of Sodium Bisulfite on the Toxicity of Epinephrine. Richards, R. K.: J. Pharmacol. & Exper. Therap. **79**: 111, 1943.

Sodium bisulfite is, in itself, relatively nontoxic for rats. It is present in commercial extracts in concentrations no greater than 0.2 per cent. The toxicity of epinephrine hydrochloride solution, U. S. P., was compared with that of solutions containing 0.1 per cent and 0.2 per cent of sodium bisulfite. Epinephrine was found to be twenty-seven times more toxic for rats by intravenous than by subcutaneous injection. The addition of as little as 0.1 per cent of the bisulfite doubled the toxicity of the adrenalin given subcutaneously, and tripled that given intramuscularly. The addition of 1 per cent sodium bisulfite increased the toxicity of adrenalin by subcutaneous injection about twelve times. The intravenous toxicity of the adrenalin solutions was not influenced by the presence of the sulfite. Since the potentiating effect of the bisulfite is practically absent when the solution is administered intravenously, the difference in the results is probably due to some local effect of the bisulfite upon the speed of absorption of the adrenalin. A similar effect of sodium bisulfite was noted on neosynephrine and procaine hydrochloride.

F.

Loaiasis and Onchocerciasis: A New Antigen for Their Diagnosis by Skin Test. Culbertson, J. T., Rose, H. M., and Demarest, C. R.: Am. J. Hyg. **39**: 152, 1944.

Immunologic tests have shown promise as diagnostic aids in both loaiasis and onchocerciasis. Strongly positive cutaneous tests and positive complement fixation tests were obtained in four patients with known infestation. The antigen used was derived from the cotton rat

filarial worm. Thirty-eight of forty patients not suspected of filarial infection gave completely negative reactions when tested with antigen.

H.

Protein Metabolism and Acquired Immunity. Cannon, P. R.: J. Am. Dietet. A. **22**: 77, 1944.

It is suggested that antibody production is a phase of protein metabolism, and that protein deficiency will, in time, impair the maturation and preservation of the antibody mechanism. The possible relationship of hypoproteinemia and increased susceptibility to infection is discussed. The theory is advanced that the acquisition of a high level of immunity is dependent upon an adequate food intake, especially of protein. Diseases characterized by marked protein deficiencies manifest a loss of acquired immunity.

H.

A Study of Oils Used for Intramuscular Injections. Brown, W. E., Wilder, V. M., and Schwartz, P.: J. Lab. & Clin. Med. **29**: 259, 1944.

The properties of corn, cottonseed, sesame, and peanut oils, which are used as vehicles for intramuscular injections of drugs, were compared. Corn oil was found to be less viscid than the other oils at room temperature, and remained fluid at temperatures as low as –10° to –15° C. Sterilization temperatures were well tolerated by all the oils. The various chemical agents used as preservatives were found to be responsible for the irritating reactions observed after intramuscular injections of various proprietary preparations. The oils were injected intramuscularly into rats and rabbits, and the tissues studied after an interval of from one to nineteen days. Twenty-four hours after injection, increased round-cell infiltration appeared and the oil was found scattered throughout the muscle. Corn and sesame oils produced the least amount of reaction, whereas peanut oil produced the most marked reaction.

H.

Microscopic Observation of Collodion Particle Agglutination in Protein-Antiprotein Systems. Burger, M.: J. Lab. & Clin. Med. **29**: 352, 1944.

Horse, hog, human, bovine, sheep, and chicken sera and egg white protein-antiprotein systems were studied by the ordinary precipitation technique and by the macroscopic and microscopic collodion particle agglutination techniques. Positive results may be obtained with the microscopic agglutination technique at titers which may give negative results with precipitin testing methods.

H.